

2, line 3 to page 3, line 13, as well as Figs. 2A-2C for further explanation of the finite delay ratio (DR).

The Examiner has noted that the finite delay ratio of the first-order microphone elements disclosed in Sessler is greater than one, “because there is an inequality between length between the sound inlet port of tube 10 and the transducer 20 and the length between the sound inlet port of tube 12 and the transducer 20.” However, the fact that there is an inequality between the lengths between the inlets ports of tubes and a transducer does not necessitate a finding that the first-order microphone element consisting of the tubes 10/12 has a finite delay ratio greater than one. As discussed above, the finite delay ratio is defined as the internal delay of one of the ports divided by the propagation delay between the two ports of the first-order microphone element. The Examiner simply has not shown that the first-order microphone element 10/12 has an internal delay greater than the propagation delay between the ports of the microphone element 10/12.

Thus, Applicant submits that independent claim 1, as well as dependent claim 4, are not anticipated by Sessler, and as such, respectfully request withdrawal of the §102 rejections of these claims.

Claims 28, 29, and 32-34

Claims 28, 29, and 32 stand rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,029,215 issued to Miller, II (“Miller”). Claims 28 and 32-24 stand rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,473,684 issued to Bartlett et. al. (“Bartlett”). Applicant respectfully traverses these rejections, since neither Miller nor Bartlett discloses each and every element of these claims.

The Examiner stated that Miller discloses an automatic calibrating apparatus for a second order microphone system, and that Bartlett discloses a noise canceling differential microphone assembly. As Applicant stated in the previous response, independent claim 28 requires more than this—that is, it requires that the test sound come preferentially from the back direction. As set forth in the specification, it is indeed obvious to either provide a test signal that is omnidirectional (coming from all directions) or a test signal that preferentially comes from the front direction to match microphone elements (see page 13, lines 1-3). However, it is not obvious to provide a test signal that preferentially comes from the back direction.

Thus, Applicant submits that independent claim 28, as well as the claims depending therefrom (claims 29 and 32-34), are not anticipated by either of Miller or Bartlett, and as such, respectfully request withdrawal of the §102 rejections of these claims.

Claim Rejections-35 U.S.C. §103

Claims 2-13

Claims 2-13 stand rejected under 35 U.S.C. §103(a) as being obvious over various combinations of Sessler, Allen, Killion, and Thompson. Without acquiescing that Killion is a §102(e) prior art reference, and without prejudice to antedate this reference should it become necessary, Applicant respectfully traverses these rejections, since none of these references, alone or in combination, discloses, teaches or suggests the combination of elements required by these claims.

In particular, as discussed above, Sessler, does not disclose a second-order microphone assembly that includes first-order microphone elements having a DR greater than one, as required by independent claim 1, and Allen, Killion, and Thompson do not supplement this failed teaching. Further, claims 2-13 recite additional patentable features that distinguish over

any combination of Sessler, Allen, Killion, and Thompson, which Applicant reserves the right to discuss in further detail in the future should it become necessary.

Claims 14-21

Claims 14-21 stand rejected under 35 U.S.C. §103(a) as being obvious over various combinations of Sessler, Allen, Killion, and Thompson. Without acquiescing that Killion is a §102(e) prior art reference, and without prejudice to antedate this reference should it become necessary, Applicant respectfully traverses these rejections, since none of these references, alone or in combination, discloses, teaches or suggests the combination of elements required by these claims.

In particular, as the Examiner correctly pointed out, Sessler does not disclose second-order microphone assemblies that include first-order microphone elements that have no nulls, as required by independent claim 14. However, Allen, as well as Killion and Thompson, do not supplement this failed teaching. The Examiner states that Allen discloses the use of omnidirectional microphones in second order microphone systems. While Applicant does not disagree with this, the fact that omnidirectional microphones are used in second-order microphone systems does not affect the patentability of claim 14.

Claim 14 requires each of the first-order microphone elements to have no nulls. While it is true that an omnidirectional microphone indeed has no nulls, it is also true that an omnidirectional microphone is not a first-order microphone element, but rather a zeroth-order microphone element. (See background of the specification). It is only when two omnidirectional microphones are connected together, do they make a first-order microphone element, which in the prior art, have been described as having nulls. Simply put, the Examiner has not pointed out that Allen discloses any first-order microphone elements that have patterns with no nulls.

Further, claims 15-21 recite additional patentable features that distinguish over any combination of Sessler, Allen, Killion, and Thompson, which Applicant reserves the right to discuss in further detail in the future should it become necessary.

Claims 22-27

Claims 22-27 stand rejected under 35 U.S.C. §103(a) as being obvious over various combinations of Sessler, Killion, and Thompson. Without acquiescing that Killion is a §102(e) prior art reference, and without prejudice to antedate this reference should it become necessary, Applicant respectfully traverses this rejection, since none of Sessler, Killion, and Thompson, alone or in combination, discloses, teaches or suggests the combination of elements required by these claims.

In particular, as discussed above, Sessler does not disclose second-order microphone assemblies that include first-order microphone elements having a DR greater than one, and thus, do not disclose first-order microphone elements that have a DR within the range of 1.5 and 5, as required by independent claim 22. In addition, there is no suggestion in Sessler that the DR of the first-order microphone elements disclosed therein be in the range of 1.5 and 5, since conventional wisdom prior to the invention was to arrange the first-order microphone elements within a second-order microphone assembly, such that they had a DR of 1 or less (see background of the specification). Further, claims 23-27 recite additional patentable features that distinguish over any combination of Sessler, Killion, and Thompson, which Applicant reserves the right to discuss in further detail in the future should it become necessary.

Thus, Applicants believe that claims 22-27 are not obvious over the combination of Sessler, Killion, and Thompson, and as such, respectfully request withdrawal of the rejections of these claims.

Claims 30, 31, and 35

Claims 30, 31, and 35 stand rejected under 35 U.S.C. §103(a) as being obvious over Miller. Applicant respectfully traverses this rejection, since Miller does not disclose, teach, or suggest the combination of elements required by these claims.

In particular, as discussed above, Miller does not disclose a microphone matching method that requires the test sound to preferentially come from the back direction, as required by independent claim 28. Further, claims 30, 31, and 35 recite additional patentable features that distinguish over Miller, which Applicant reserves the right to discuss in further detail in the future should it become necessary.

Thus, Applicants believe that claims 30, 31, and 35 are not obvious over Miller, and as such, respectfully request withdrawal of the rejections of these claims.

Conclusion


Based on the foregoing, all claims are now allowable and a Notice of Allowance is respectfully requested. If the Examiner has any questions or comments regarding this amendment, the Examiner is respectfully requested to contact the undersigned at (714) 830-0606.

Respectfully submitted,

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